



Rescuing Billy Elliot's Brain: Neuroscience & Early Intervention

Ros Edwards (Southampton)

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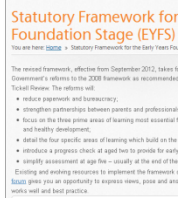
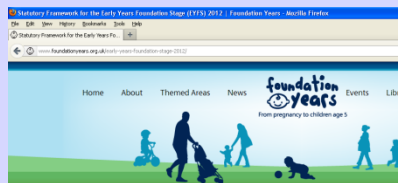
<http://www.earlyinterventionfoundation.org.uk/>

The Use of Brain Science in Policy and Practice Literature

“The sad part of the increased knowledge about baby brain development is that it is clear that the way hardwiring consolidates the connections makes it very hard to undo or ‘rewire’” (www.solihull.nhs.uk)

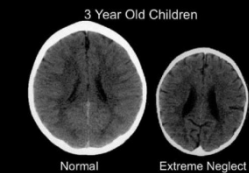
“A child’s early experience has a long lasting impact on the neurological architecture of their brain and their emotional and cognitive development” (www.hacvs.org)

“The wrong type of parenting and other adverse experiences can how a profound effect on how children are emotionally wired” (Allen 2011: xiii)



Early Intervention: The Next Steps

An Independent Report to Her Majesty's Government
Gordon Allan MP



The Allen Report

- ‘The Innate drive to social and emotional health’
- ‘Early experiences determine brain architecture’
- ‘Secure attachment’
- ‘The role of the mother’s mental state’
- ‘Causes of impairments to children’s social and emotional development’
- ‘The importance of mental health’
- ‘Causes of mental **disorder**’
- ‘The importance of the infant brain’ (an 18 month window)
- ‘Infant **trauma**’
- ‘Attunement and empathy: keys to healthy emotional development and **non-violence**’
- ‘Lack of attunement – starting down the road to **dysfunction**’



Early Intervention: the Next Steps (2011), Chapter 2 – ‘Using Our Brains’

Brain Science in Early Intervention Policy Literature

- Early Intervention: *Good Parents, Great Kids, Better Citizens* (2008) Allen & Duncan Smith: our 'broken society' can only be 'mended' by tackling its 'dysfunctional base', which threatens a 'feral future on our streets'
- The Field Report, *The Foundation Years: Preventing Poor Children Becoming Poor Adults* (2010) – importance of early years (pregnancy-5yrs), draws on RCTs to predict labour market outcomes of 5 year-olds and Perry's research on cortisol.
- *Early Intervention: the Next Steps; Early Intervention: Smart Investment, Massive Savings* (2011) – importance of attachment and attunement at 0-3 to avoid mental disorder and dysfunction.
- Tickell Review – *The Early Years: Foundations for life, health and learning – An Independent Report on the Early Years Foundation Stage* (2011)
- Munro Review of child Protection: *a Child-centred System* (2011) – the first eighteen months 'when the emotional circuits are forming', are critical.

Linking the 'Evidence'

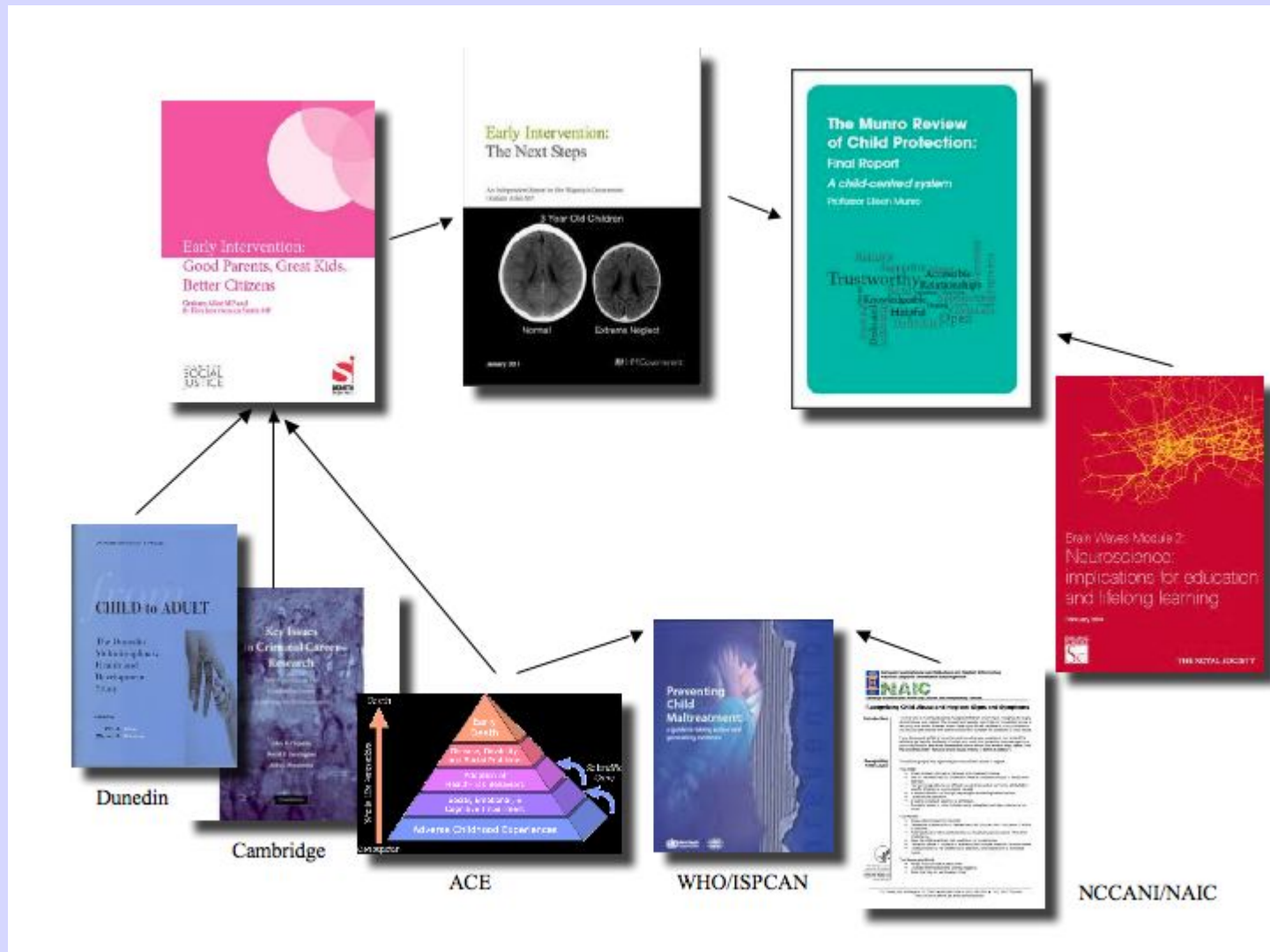


Image from movingfrombowlby.wordpress.com

Lesser-cited Caveats

- 1) Developmental neuroscience research says a great deal about the conditions that pose dangers to the developing brain and from which young children need to be protected. **It says virtually nothing about what to do to create enhanced or accelerated brain development.**
- 2) The developing brain is open to influential experiences across broad periods of development. This openness to experience is part of what accounts for the remarkable adaptability of the developing mind. Although there are a few aspects of brain growth that require particular kinds of experience at particular times, as far as we know at present, **this is more the exception than the norm for human brain growth.**
- 3) The kinds of early experiences on which healthy brain development depends are ubiquitous in typical early human experience—just as nature intended. This means, however, that **concern should be devoted to children who, for reasons of visual impairment, auditory processing problems, major perceptual-motor delays, and other basic deficits cannot obtain these experiences** on which the developing nervous system depends.
- 4) Abusive or neglectful care, growing up in a dangerous or toxic environment, and related conditions are manifest risks for healthy brain development. **Beyond these extremes, the nature and boundaries of the environmental conditions necessary for healthy brain growth are less well known**, partly owing to the complexity and the cumulative achievements of cognitive, language, and socioemotional growth. Exploration in this area is cutting-edge research.

From Neurons to Neighbourhoods, National Research Council, (2000: 183-184)

Emphasis added

http://www.brainscience.soton.ac.uk

The screenshot shows a Windows Internet Explorer browser window with the address bar displaying <http://www.brainscience.soton.ac.uk/research.php>. The browser's menu bar includes File, Edit, View, Favorites, Tools, and Help. The Favorites bar shows several links, including 'Untitled Message', 're research assignment', 're dissertation', 're Erasmus Exchange Program', 'Free Hotmail', 'Outlook Web App', 'RealPlayer', 'Suggested Sites', and 'Web Slice Gallery'. The main content area features a green background with the following elements:

- 3 Year Old Children**: A header for a section containing two axial brain scan images. The left image is labeled 'Normal' and the right image is labeled 'Extreme Neglect'.
- UNIVERSITY OF Southampton**: The university's name in a serif font.
- BRAIN SCIENCE & EARLY INTERVENTION**: The main title of the research center in a bold, sans-serif font.
- Navigation Links**: A list of links on the left side: [Home >](#), [Research >](#), and [Contact >](#). The 'Research >' link is currently selected.
- Research Process**: A heading for the current page.
- Share This**: A button with a left-pointing arrow and the text 'Share This'. A 'New' button is also visible to its right.
- The research involves:** A heading for a list of three items:
 1. Reviews of key documents that have shaped political and policy engagement with neuroscience in relation to early years childrearing.
 2. Interviews with influential public figures who are interested in the application of neuroscience as an evidence base in child and family intervention policy and practice.
 3. Interviews with health care providers and early years practitioners.
- London South Bank University**: The logo and name of the university in the bottom left corner.
- The Faraday Institute for Science and Religion**: The logo and name of the institute in the bottom right corner.

The browser's status bar at the bottom shows 'Internet' and a zoom level of '100%'.

Theorising Brain Science

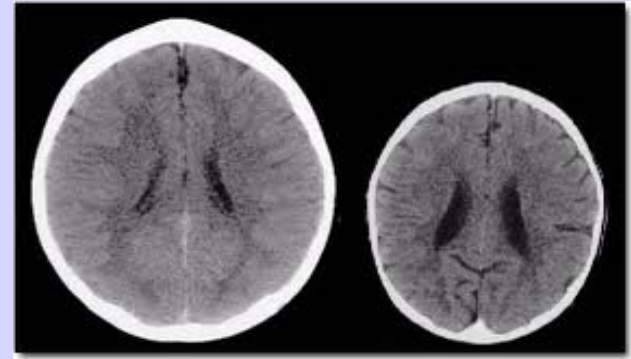
We are seeing a concerted attempt, across Europe and North America at least, to argue that the discoveries of these neurosciences hold the key to the management of all manner of human activities and experiences.

(Abi-Rached and Rose, 2010, p.32)

... we are now acquiring the ... obligation to take care of our brain - and the brains of our families and children - for the good of each and of all (Rose and Abi-Rached, 2013, p.223).

The Myth of the First Three Years

- Brain images and mechanistic metaphors are persuasive
- Children are their brains



“A brain that’s loved and nurtured
and one that isn’t.”

- Correlations are taken as causation, processes are over-emphasised

The Influence of Brain Science

“Our early-twenty-first century world truly is filled with brain porn, with sloppy reductionist thinking and an unseemly lust for neuroscientific explanations. But the right solution is not to abandon neuroscience altogether, it’s to better understand what neuroscience can and cannot tell us, and why.”
(Gary Marcus, neuro-psychologist, The New Yorker, 2.12.12)

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Showing posts sorted by relevance for query parenting. [Sort by date](#) [Show all posts](#)

Friday, 3 June 2011
Is poor parenting really to blame for children's school problems?



It's tough being a parent of a child with developmental problems. You coo over your baby, anticipating how they'll grow into a cheerful and contented individual, only to find that the older they get, the more the problems become apparent. Your child may be late starting to talk, and then communicate with difficulty, may struggle with reading, be clumsy, hopeless at maths, or poor at making friends. In many cases, several of these problems occur together. Gradually, as life throws more challenges at him or her, your charming toddler turns into an anxious and unhappy child, reluctant to go to school, fearing failure at every turn, and attracting ridicule from other children.

What you really *don't* need at this point is to be told that it's all your fault. Yet there is a band of self-appointed 'experts' who seem determined to keep this message alive, and to add guilt to the other emotions that parents experience. I know of mothers who think that their child's problems are due to their having an occasional drink during pregnancy, going out to work when their child was young, or allowing them to eat food with a number. And the media, absolutely

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- Mobilised to support pre-existing policy directions

“If you’re asking to what extent does neuroscience and just neuroscience influence policy I would say in a very very limited way ... there can be a tendency to want to put the neuroscience argument at the front because it’s couched in science and, you know we generally speaking believe science has an authority that social sciences doesn’t have ... any argument that says that Labour’s commitment to early years investment and intervention was based upon neuroscience is, I think, well I just think it’s not true basically”.

- Mobilised to support public expenditure

“The reality is our service is expensive. We have to be clear that what we’re doing *works* and there’s a reason for what we’re doing so we have to justify it hugely so it’s [got to be] absolutely clear that this early period makes a huge impact to people’s whole lives, prison populations, all those sort of things in the future.”



HEALTH

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AUTHOR
Britt Peterson

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The Pregnant Brain: How Mothers Think Differently.

Feb 20, 2012 12:00 AM EST

How pregnancy transforms the brain.

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With 80 percent of women experiencing some form of impaired cognitive function during pregnancy, it's no surprise the idea of "pregnancy brain" has taken hold. But a recent paper suggests that the memory loss, stress, and general fuzzy-headedness of the prenatal period may actually have a crucial role in getting women ready to be mothers.



Since the 1940s, doctors have suspected that the hormonal bath of pregnancy helps prepare women for the demands of motherhood. But while there's plenty known about how hormones affect the teenage and the menopausal brains, the pregnant brain is poorly understood and little studied in humans. "Given that the vast majority of women give birth to at least one child, it's surprising to me that we don't know more about the maternal brain," says Laura M. Glynn, a professor of psychology at Chapman University.

Recent research has mostly been done on pregnant rodents, with studies finding that the hormone rush of pregnancy improved spatial skills (leading to better and quicker foraging for food) and multitasking, as well as increased boldness and decreased anxiety.

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Glynn argues for the existence of “maternal programming,” a process by which the pregnant woman’s hormone-soaked brain prepares for the challenges of parenthood. As it turns out, some of the worst parts about pregnancy—vague but nagging cognitive and memory lapses that are often dismissed as imaginary or just stress—may actually be side effects of the mental shifts that happen as a woman becomes a mother. In other words, you may be losing your memory at the same time you’re gaining new capacities to bond with and care for an infant.

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Mind & Brain :: Mind Matters :: January 19, 2010 :: 13 Comments :: Email :: Print

The Pregnant Brain as a Revving Race Car

Mothers-to-be get better at recognizing emotions

By Craig H. Kinsley and R. Adam Franssen



The Mother-Baby Bond

After spending nine months intricately joined together, mother and infant share more than just common features. Now, in a special partnership with theVisualMD.com, we present a look at this remarkable bond, complete with scientifically accurate and stunning images. »

April 30, 2010

What turns a young female concerned mainly about herself into a good mother who will make sure her offspring survive in an otherwise hostile world? The bodily changes of childbearing are obvious, but as we are discovering, the changes in the brain are no less dramatic.

The [maternal brain](#) is a formidable object, a singular entity forged by hormones, neurochemicals, and exposure to the ravaging demands and irresistible cuteness of offspring. During [pregnancy](#), the female brain is effectively revving up for the difficult tasks that await. A mother-to-be

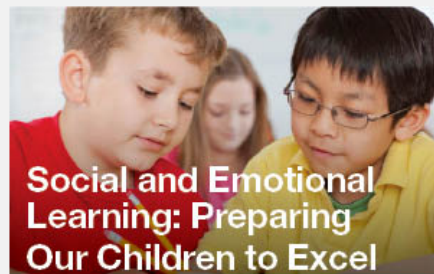


PREGNANT WOMAN
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The Pregnant Brain: How Mothers Think Differently

What turns a young female concerned mainly about herself into a good mother who will make sure her offspring survive in an otherwise hostile world? The bodily changes of childbearing are obvious, but as we are discovering, the changes in the brain are no less dramatic..... The maternal brain is a formidable object, a singular entity forged by hormones, neurochemicals, and exposure to the ravaging demands and irresistible cuteness of offspring. During pregnancy, the female brain is effectively revving up for the difficult tasks that await.....let us contemplate the maternal brain in all of its wet majesty. Among its remarkable changes are those that allow the mother to focus on her infant in the persistent attempt to puzzle out the child's needs and wants.

Scientific American, Jan 19 2010

I knew physical violence was dangerous, but I hadn't thought of stress as being dangerous prior to that training. And when I realised what cortisol, the mother's cortisol levels would do to the baby, specifically the baby's brain made me think no actually it's not about keeping a baby once their born safe, it's how do we antenatally keep this baby safe (Family Nurse Partnership practitioner)

'cycles of disadvantage'

Everyone has a history, a pattern of something that's happened before. It's not a surprise that these young girls get pregnant. What would be interesting to see is the baby's outcomes and whether when they're older they make very different choices.

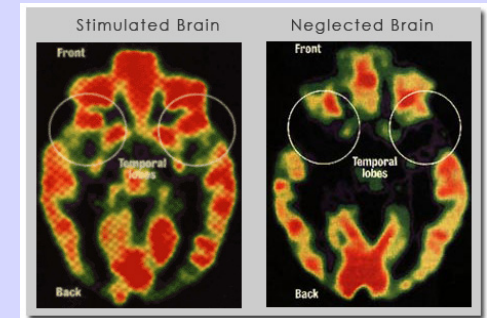
A lot of these young people have had complicated young lives and maybe if left just to their own devices just to bring up their new baby they would repeat patterns that they'd had in their young childhood. This programme gives them well researched advice and an opportunity to discuss a different way of parenting this new baby. So just break cycles of behaviour and patterns of behaviour that have grown up within families through generations. The more we know, the more we understand. The more appropriate support can be given to perhaps try and break what previous generations have, how they've acted. To help the biological processes play out in the way they're meant to when you're doing everything you should have done. So I think it would have a big impact on a lot of people if they knew as much as perhaps we do.

'cycles of disadvantage'

The young mums know what they want. We're just helping them say you can do that. Sadly many a grandparent will say you can't, why do you think you can do that then: 'she don't need that then'.

If you're really allowed to look back and have a bit of a delve around in the family workings you can see why low self esteem might have come about. You can always find a link somewhere – it depends how truthful people are. If some people don't want you to know then it's harder. The program does a lot of probing in a very clever way actually. It allows young people to reflect on how they were parented. So it's one removed from them and puts them back into being a child. Saying there's no blame here but is there anything you'd rather your parents hadn't done, would you like to bring this baby up in a different way? So it's gently teasing out stuff.

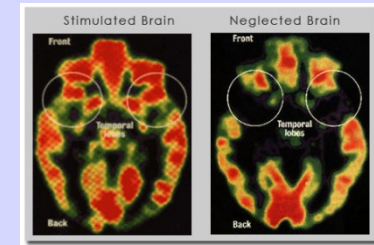
Overcoming social class I



[Brain science] breaks the class spell. ‘Oh well, we could have done, you know but it’s the wretched class system in our country, it’s so tightly drawn, you know, there’s not much we can do about it’. And the early years studies seem to show that’s not true. (Labour MP)

When sociologists point out that poor kids have worse life chances than rich kids, is there a danger that people on the Left adopt a kind of crude social determinism ... this kind of crude sociological determinism excused, you know, really an abdication of responsibility. (New Labour advisor)

Overcoming social class II



The two young people I saw yesterday. He'd never told anyone but he'd wanted to be a ballet dancer. He didn't dare tell anyone because he would be laughed at, so he took up skateboarding. Which was a sort of halfway house sort of thing. They both love classical music but they'd never dare tell anyone because they'd be laughed at. But actually when they told me I was so excited for them and I said you know this is going to help your baby. They were scared to almost say it even to me who's a lot older, it wasn't someone from their own generation, but it was refreshing to hear it, that they didn't dare tell anyone else about. Quite cool really isn't it. He's damaged his knees too much though to be a ballet dancer with his skateboarding so that's a shame. But he's artistic, he's learning to be a tattooist. So he's got art, you know, you can see it in him. But his father didn't want to hear about it, any dancing, wanted football, rugby, that was fine, but any of that other stuff, no don't mention it again. Because he probably did mention it when he was 10, 11, quite bravely. But if his children were allowed to say it in the future aged 10, that would be great wouldn't it?

“The paper will outline the key scientific concepts behind the development of early brain architecture and skill formation and identify the crucial challenge these present to the desire to improve social mobility. It will argue that these concepts create the imperative for greater efforts at intervention directed at the family sphere to prevent the squandering of individual potential (particularly among children from lower-income backgrounds).” (*Parenting Matters: Early Years and Social Mobility*, Centre Forum Report, p. 5)



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The sad part of the increased knowledge about baby brain development is that it is clear that the way hardwiring consolidates the connections makes it very hard to undo or “rewire”



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What matters most to a child's life chances is not the wealth of their upbringing but the warmth of their parenting
David Cameron – 2011



‘Parenting not poverty shapes a
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Nick Clegg 2011